The Hawk Moth
Daphnis placida on
Alstonia constricta (Bitter Bark)

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Planning and Organization Meetings

A quarterly meeting is scheduled in order to plan club activities and the magazine. See BOIC Programme.

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Membership fees are $30 for individuals, schools and organizations.

Aims of Organization

- To establish a network of people growing butterfly host plants;
- To hold information meetings about invertebrates;
- To organize excursions around the theme of invertebrates e.g. butterflies, native bees, ants, dragonflies, beetles, freshwater habitats, and others;
- To promote the conservation of the invertebrate habitat;
- To promote the keeping of invertebrates as alternative pets;
- To promote research into invertebrates;
- To encourage the construction of invertebrate friendly habitats in urban areas.

Magazine Deadlines

If you want to submit an item for publication the following deadlines apply:
March issue – February 1st June issue – May 1st
September issue – August 1st December issue – November 1st

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Cover Painting

The Hawk Moth *Daphnis placida* – painting by Lois Hughes. Photo by Erica Siegel. Prints available.

From the President

Thank you to all our authors for your support through your contributions of further interesting articles on the diverse world of invertebrates. We welcome articles, no matter how small, from all of our members.

After reading Peter Hendry's epic work on some Tasmanian butterflies, I could not but admire his tenacity in winkling out the often-convoluted stories of the identification and naming of many of these species. I congratulate him on his excellent photographs of the various specimens.

A "new" version of the Club website is now up and running thanks largely to the very generous help of Hongming Kan. There is much that can now be added to the site. In particular, I invite members to send in images of butterflies to add to our embryonic photo gallery. The source of each image will be fully acknowledged. In tandem with Peter Hendry, we are developing a gallery of moth images and I would love to hear from enthusiasts of other insects so that we can add them as well.

For the past several years the Club website has been hosted at no charge through the generosity of Rob Whyte and his business ToadShow. This is no longer possible and we have a new host. Thank you Rob for your generous support over the past several years.

The next planning meeting for the Club will be held at Capalaba from 10 am on February 15th next. All members "within range" are invited to attend. Following the meeting, Richard Zietek will give a talk on beetles and how to breed some species.

Best wishes *Ross*

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The Hawk Moth *Daphnis placida* (Lepidoptera: Sphingidae: Macroglossinae) - *Peter Hendry*

When a particularly splendid specimen of the Hawk Moth *Daphnis placida* flew into the home of our cover artist, Lois Hughes, she knew immediately she had to paint it. The result is the cover of this issue of *Metamorphosis Australia.* I was given the honor to write a creature feature to accompany Lois's fine art work. Though I live not far from Lois I have not yet collected *D. placida* adults in light traps at my home in Sheldon, although John Moss recalls finding several larvae feeding on a specimen of the north Queensland apocynacid *Ochrosia elliptica* growing in my garden. It has been collected from my bush block west of Bundaberg, where John Moss and myself once found the larvae feeding on another apocynacid *Alstonia constricta,* or Bitter Bark.

Daphnis placida belongs to the Hawk Moth family Sphingidae and is placed in the subfamily Macroglossinae. The Macroglossinae are separated from the other two subfamilies, Sphinginae and Smerinthinae, by the pupa being without spiracular furrows (note a) and by the fact the adults possess a patch of sensilla (note b) on the inner surface of the first labial palpal segment (note c) (Inoue, Kennett & Kitching, 1997). *Daphnis placida* was named by Francis Walker in 1856, as *Darapsa placida* from a specimen from Sumatra. Rothschild and Jordan, (1903), placed it in the misidentified genera *Deilephila* and were the first to figure the genitalia. Bell and Scott (1937) also figured the genitalia and gave a brief description of the larva as follows; "Larva : - Final instar. Horn long, down-curved, tuberculate" (most Hawk Moth larvae have a horn projecting from the tail end). "Colour: a pale dorso-lateral stripe from segment 2 to base of horn ; a pale line on anal segment. Spiracles orange". Seitz (1929) illustrated the adult (Fig. 1).

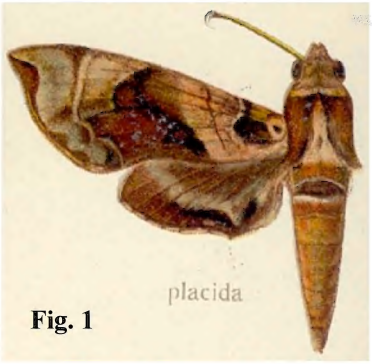

Fig. 1

Daphnis placida has two subspecies: *D. p. placida* (Walker, 1856) and *D. p. salomonis* (Rothschild, 1906). *D. p. salomonis* occurs on the Solomon Islands with the type species coming from New Georgia. *D. p. placida* ranges from Andamans, Sundaland, Thailand, S. China, Phillipines, N. Australia, New Hebrides, New Caledonia, Loyalty Islands (Inoue, Kennett & Kitching, 1997). According to Common (1990), in Australia it occurs in the Northern Territory and in eastern Australia from the islands of Torres Strait to north-eastern New South Wales. In Australia the larvae of *D. placida* feed on plants in the family Apocynaceae, including *Alstonia constricta, A. actinophylla, A. muelleriana, A. scholaris, Ochrosia*

elliptica and *Tabernaemontana divaricata*, and in the family Cornaceae including *Alangium villosum* (Common 1990, Moulds 1998).

Fig. 2

In preparing this article I am indebted to John Moss for corrections and additions, to Max Moulds for corrections to and additions of, the host plants and to Jim Tuttle for use of his photograph of the 5th instar larva (Fig. 2).

Notes:
(a) spiracle: air hole through which insect transpires
(b) sensilla: simple sense organ
(c) labial palps: paired appendages related to the ventral part of an insect's mouth

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Images as previously credited

ITEMS OF INTEREST

Predators by Proxy – *Densey Clyne*

Walking through the leaf litter in my bush garden in Sydney I almost tread on her but the big black and gold wasp takes no notice of my approaching feet; she is too intent on her job. So why is she running backwards and what is she dragging? I bend down to have a closer look. Her burden is Olios picta, a large huntsman spider familiar to me in the garden. But this one is helpless, inert, already paralysed by the wasp's sting.

I follow the wasp to a patch of sandy soil at the base of a gumtree. Dropping the spider she makes a quick dash down a burrow that's partly concealed under foliage, then drags her victim in after her. She will lay an egg on the spider which her sting will already have preserved as fresh food for the developing grub.

That was written many years ago in my early days as an ardent spider watcher. It was only later that I became fascinated by the wonderful ways of the wasps themselves and could put a name to that digger wasp. *Cryptocheilus bicolor* (family Pompilidae) is easily identified by her choice of victims. She specialises in large huntsman spiders (family Sparassidae) winkling them out of their daytime hiding places to drag them backwards into her burrow, often from a distance. Some related pompilid wasps actually amputate the legs of large spiders for easier handling! In Kakadu National Park I photographed another fossorial (digger) wasp, this time the impressive Cicada Killer, *Sphecius pectoralis,* (family Sphecidae) that ranges through tropical treetops to hunt down cicadas and inter them in her burrow. I suspect that she takes the easy option of dropping her paralysed victims to the ground first.

Spider Wasp (*Cryptocheilus bicolor*) with *Olios picta*

Cicada Killer (*Sphecius pectoralis*) with *Macrotristria intersecta*

It was in that suburban garden and on early trips further afield that I had my first encounters with those and other solitary wasps that I later came to call Predators by Proxy. Why? Because they don't kill their victims; they merely paralyse and/or preserve them, leaving the next generation to do the actual killing. A term more usually applied to small wasps of the family Chalcidae is *parasitoid*, the suffix *-oid* meaning "*resembling"* or "*having the form of. .*" Is the resemblance to a parasite all that clear, though? By definition a parasite does not kill its 'victim' or host. Neither does a parasitoid wasp but she does commit it to a living death by the actions of her offspring. This applies equally to most of the solitary wasps, whatever their reproductive strategy and whether we call them parasitoids or predators by proxy. The victims' demolition by degrees can seem gruesome to us humans but we can hope that the female wasp does an efficient job as anaesthetist and that the dinner is unaware of the diner.

Parasitoid ichneumonid wasp with cocoon and remains of victim

The various species of mud dauber and potter wasp use more or less the same technique as the digger wasps, immuring the living but moribund caterpillar or spider behind the impregnable mud walls of its final prison. As a departure from using their own nests some wasps invade the nests of their victims, but from the outside. Using their greatly elongated ovipositor these females lay their eggs directly into or near the larvae of the incumbent. Certainly a less labour-intensive strategy and apparently done entirely by touch.

Potter wasp *Delta* sp. at nest with caterpillar prey

Gasteruption sp. ovipositing into Colletid bee's nest

Sitting on my back verandah I am sometimes aware of a vague movement in the air close to the house wall. It is made by a small, barely perceptible insect, a species of *Gasteruption* (family Gasteruptiidae) that I call the Wispy Wasp. She flies slowly with long legs dangling, slender body and ovipositor extended and transparent wings almost invisible. She is checking the brick wall for the nest hole made by a Colletid bee. Once this is located the tiny marauder will back up to the hole and insert her ovipositor, driving it in up to the hilt to lay her egg on or near the bee's offspring. The hatching wasp larva will feed and develop not only on the bee's offspring but also on its pollen and nectar store.

Some years ago in Dorrigo National Park, NSW, I saw another version of this strategy. On a fallen rainforest log a colourful little wasp was moving about investigating small holes with her antennae. As I watched she chose a hole, turned around, and without looking inserted her long ovipositor accurately into the hole. The wasp was later identified from my photographs as a species of *Callibracon* (family Braconidae) that preys on the larvae of wood-boring beetles. Presumably the

Callibracon sp. ovipositing into rainforest log

holes in the log were made by the female beetle when egg-laying. I wonder what the antennal investigation revealed to the wasp - perhaps the depth of the hole in relation to the length of her ovipositor or more probably just the existence of a live beetle grub.

The above are examples of the predator wasp either making a nest for her offspring and their food store or using her victim's nest. Much simpler seems the strategy of those wasps that attack while their victims are feeding in the open. A single egg or many may be laid on or in the victim. Well grown lepidopterous larvae are often chosen and this time the victim is usually not paralysed but can move about and go on feeding right up to the end.

A caterpillar of *Phaelenoides tristrifica* is attacked by a parasitoid Chalcid wasp. The eggs are laid externally; the newly hatched wasp larvae burrow inside to feed on the living caterpillar then emerge to pupate on the now dead victim.

The caterpillar of the Grapevine Moth, *Phalaenoides tristifica,* is often the victim and I once followed the outcome of such an attack by a Chalcid wasp. Eight eggs had already been laid externally and when the wasp larvae hatched they burrowed inside the caterpillar and started feeding. Meanwhile the caterpillar itself continued to eat and move about. Then one day I watched eight fully-developed wasp larvae emerge

and weave their cocoons between the now lifeless caterpillar's legs. Days later out came the tiny wasps on to the shrivelled skin of the caterpillar that gave them life. An interesting variant on that last strategy happened in my garden when a caterpillar of the pest moth *Chrysodeixis argentifera* was attacked by a Chalcid wasp, probably a species of *Copidosoma* (family Encyrtidae). The caterpillar seemed to have reached maturity as it had made a silk shelter, presumably to pupate in. When examined some time later the now dead caterpillar's transparent skin bulged almost to bursting point with hundreds, perhaps thousands, of tiny wasp larvae. Later I watched some of the mature wasps emerging from their grisly meal. This was an example of polyembryony, where one egg develops into a number of embryos, a rare phenomenon that with insects occurs almost exclusively among the wasps. Twinning carried to extremes!

In a striking example of polyembryony, the caterpillar of a common pest moth *Chrysodeixis argentifera* is attacked by a parasitoid Chalcid wasp whose single egg gives rise to thousands of embryos.

With all their various strategies the wasps I've been writing about have major characteristics in common: they live solitary lives; they capture prey on behalf of their offspring, who do the actual killing; and they are not aggressive towards humans. Not so the paper wasps, the species of *Polistes.* They are social; they are true predators; they feed their larvae progressively; and as many of us well know they are extremely aggressive in defence of their nests, attacking *en masse* if we dare to approach. Outside on my back verandah the founding queen of a colony of these paper wasps is at work making a nest on my screen door. She has already commenced feeding some advanced larvae while a few cells have been sealed off and several eggs remain unhatched. The lone female won't have to wait long now for help with nest duties from her first mature offspring.

For several reasons - mainly a number of nasty stings on bare arms and face - I have never had much success getting good photographs of paper wasp activities. Now is

the time, and so far I have been able to approach without upsetting the founding female. As her offspring emerge I shall try my luck at recording their ongoing story. Wearing long sleeves, gloves and a hat with a fly veil!

A female paper wasp (*Polistes* sp.) guards her new nest

A paper wasp feeds a mature larva with a portion of caterpillar

Photos Densey Clyne

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Life history notes on the Orange Ringlet, *Hypocysta adiante adiante* (Hubner, 1831) Lepidoptera: Nymphalidae - *Wesley Jenkinson*

The Orange Ringlet is encountered along much of the eastern districts from north-eastern Queensland into southern New South Wales, including areas west of the Great Dividing Range. The species is generally common in south-eastern Queensland.

In Queensland the species is encountered in a variety of habitats where the host grasses are established including coastal heathland, open woodland, eucalypt open-forest and occasionally in suburban gardens where suitable breeding areas are situated nearby. This species tends to avoid wetter rainforest areas where the Brown Ringlet (*H. metirius*) can be commonly observed within season.

The adults fly close to the ground amongst grasses. They have the typical ringlet 'bobby' flight and while basking their wings are periodically opened and closed quickly, revealing the upper-side orange colour. Once disturbed they can fly quite rapidly and can be difficult to follow through understorey vegetation. Both sexes feed from a variety of small native and introduced flowers.

Whilst in flight, the adults can be very easily confused with older worn specimens of the female Rock Ringlet (*H. euphemia*). In comparison to *H. euphemia,* the adults are generally smaller and the eyespots (ocelli) on the upper side forewing are absent.

The sexes are quite similar in appearance. In comparison to the males, the females are generally slightly larger, the forewing is slightly broader and the abdomen is slightly shorter and wider.

***Hypocysta adiante adiante* (Orange Ringlet)**
Images left to right: male, female, male underside, female underside

In January 2011 a female was collected near Beaudesert in south-eastern Queensland and kept in captivity. She laid an egg and was then released. This egg was kept for life history studies. Subsequently the larva was successfully raised in captivity on the only confirmed native host, Kangaroo Grass (*Themeda triandra*). The late M. De Baar has successfully raised larvae of this species on Blady Grass (*Imperata cylindrica*) and *Digitaria didactyla* (Braby, 2000), and these may prove to be host grasses.

This egg was cream, smooth, off spherical, approximately 0.8 mm wide x 0.8mm high

Freshly laid egg

The first instar emerged prior to 8.00am and consumed its eggshell shortly afterwards. It was observed feeding during daylight hours and rested on either side of the leaves towards the base of the host plant. Typically like other species in the genus, it was very slow moving and fed from the outer edge of the leaf. The larva raised completed four instars, similar to the closely related *H. metirius, H. pseudirius, H. irius* and *H. euphemia*, attaining a length of 24mm.

1st instar larva

2nd instar larva

3rd instar larva

4th instar larva

Pupa lateral, dorsal and ventral view

The pupa, measuring 13mm in length, was located below a stem of the host plant. It was attached with silk by the cremaster with the head hanging downwards.

The total time from egg to adult was about one month, with egg duration of 5 days, larval duration 20 days and pupal duration of 7 days.

During September 2006 in cooler conditions I also raised this species from egg to adult resulting in a longer life cycle. The egg duration period was 5 days, larval duration 33 days and a pupal duration of 12 days.

Within the new boundary of the Scenic Rim Regional Shire south of Brisbane, I have records of adults from September to May. In this region the adults appear to be more numerous during spring and summer. However, this may relate to the timing of local rainfall triggering fresh growth of the host plants. At this location there are probably two generations per year.

A mating pair, female at top

Reference:

Braby, M.F. 2000. *Butterflies of Australia – Their Identification, Biology and Distribution.* vol 2. CSIRO Publishing, Melbourne.

Photos Wesley Jenkinson

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The Danaids, Browns and Nymphs of Tasmania (Lepidoptera: Nymphalidae) - an historical perspective - *Peter Hendry*

The butterfly family Nymphalidae is represented in Tasmania by three subfamilies with 14 species in eight genera.

1. The Danaids: Subfamily Danainae

The **Lesser Wanderer**, *Danaus petilia* (Stoll, 1790) was known for more than 100 years as the subspecies *Danaus chrysippus petilia* until Lushai, Zalucki, Smith, Goulson and Daniels (2005) reinstated it as a species based on DNA and morphological characters. *D. petilia* was described and illustrated (Fig. 1) by Caspar Stoll, a Dutchman, in 1790. The Atlas of Living Australia web page (Accessed Oct. 2013) shows an Australian Museum record for this butterfly, collected by G. A. Waterhouse in 1907, from the Meander Valley on Tasmania's northern slopes. However, Couchman and Couchman (1977) state "the authors were able to record a

single specimen in the Australian Museum taken at Zeehan in February-March 1907" (no collector given). I contacted David Britton from the Australian Museum, as both records indicated that there was only one specimen for 1907. Dave kindly replied with the following "The record is for Zeehan, February or March 1907, Waterhouse. It was incorrectly data based, hence the discrepancy with the ALA record. I have corrected the problem, but it will not be reflected on the ALA until they do the next update." In Tasmania, *D. petilia* occurs at irregular intervals but has not been recorded breeding there (McQuillan, 1994).

The **Monarch or Wanderer**, *Danaus plexippus* (Linnaeus, 1758) (Fig. 8) is famous for its 2,000-mile migrations between Southern Canada and the Oyamei fir forests of Mexico, where it overwinters in the millions, then returns in the spring. The first published record of the Monarch in Australia was in the *Brisbane Courier* on the 16th February 1871. It was in a report on the monthly meeting of the Queensland Philosophical Society, held on the 9th of February, at which Mr. Diggles read a paper on the mode in which various insects had become acclimatized in different parts of the world. On the 21st February 1871, W.H. Miskin wrote about the "Occurrence of *Danais Archippus* [sic] (as it was then known) in Queensland". Published in *The Entomologist's Monthly Magazine* Vol VIII, Miskin noted the sudden appearance in large numbers over a wide distribution and stated "the insect haunts localities infested by *Asclepias curassavica* (an introduced plant, but now growing wild in all parts of the bush), upon which the larva evidently feeds". In a footnote the editors of the magazine stated "The occurrence in Queensland tends to the belief that the insect may have gradually made its way across the Pacific from Western America; but its sudden appearance in such numbers has yet to be accounted for." In 2004 Clarke and Zalucki published a paper called "Monarchs in Australia: on the winds of a storm?" where they hypothesize that large numbers of Monarchs were carried to Australia on cyclonic winds, based on the fact that no fewer than three cyclones hit the Queensland coast in early 1870. In Tasmania the earliest record is 1878, which is based on a watercolour by Mary Martin Allport dated 17 February 1878 and titled 'Caterpillar of Cotton Plant'. This is without doubt the larva of *D. plexippus* and is the earliest record of the species in Tasmania (Couchman and Couchman, 1977). *D. plexippus* occurs in Tasmania as a vagrant, appearing most years and occasionally larvae are found (McQuillan, 1994).

2. The Browns: Subfamily Satyrinae

The **Tasmanian Brown**, *Argynnina hobartia* (Westwood, 1851) was originally described by John O. Westwood, in *The Genera of Diurnal Lepidoptera* Vol II 1850-1852 as *Lasiommata hobartia* from a specimen from Van Diemen's Land in the British Museum. In a footnote to his work on *Lasiommata*, Westwood noted, regarding the Australian allied species, "they may, perhaps, however, be regarded as a separate subgenus, under the name of Xenica". Arthur G. Butler (1867) erected the genus *Argynnina*. In this new genus Butler placed both *Lasiommata hobartia* (Westwood, 1851) and *Lasiommata lathoniella* (Westwood, 1851).

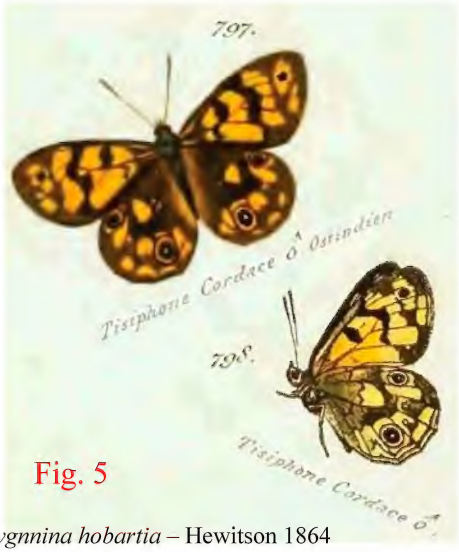


Fig.1 *Danaus petilia* (Stoll 1790) Fig.2 *Arygnnina hobartia* – Hewitson 1864
Fig.3 *A.h tasmanica* Fig.4 *Geitoneura klugii* Fig.5 *Heteronympha cordace*
Fig.6 *Nesoxenica lepera* Hewitson 1864

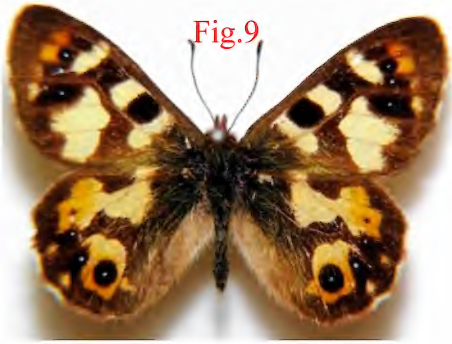
In spite of this, *Argynnina hobartia* was referred to as *Xenica hobartia* during the 1880 and early 1900 until Waterhouse and Lyell revived *Argynnina* in 1914 in their monumental work *The Butterflies of Australia.*

This species is endemic to Tasmania and although Couchman and Couchman (1977) state, "The species was not illustrated until 1914, when Waterhouse and Lyell figured a specimen from Patersonia", it was in fact first figured by Hewitson (1864) under the synonym *Lasiommata lasus*, (Fig. 2). Since the late '70s, *Argynnina hobartia* has been divided into three subspecies, *A. h. hobartia* (Westwood, 1851) (Figs 9 & 10), *A. h. tasmanica* (Lyell, 1900) (Figs 11 & 12) and *A. h. montana* Couchman, 1977. This arrangement must have been a change of heart as Len Couchman himself, in 1948, (as in Common & Waterhouse, 1972) suggested "*A. tasmanica* and *A. hobartia* possibly represent extreme geographical forms of the one species linked by intermediates." Furthermore, (Braby, 2000) seems to have some doubt about the legitimacy of the subspecies *montana* as he states "This subspecies may be transitional between *A. h. hobartia* and *A. h. tasmanica*, although Couchman and Couchman (1977) considered it to be distinct". So the question remains: "Is *A. h. montana* distinct or is it an intermediate between two extreme forms of the species?"

A. h. tasmanica was first described by George Lyell junior from 12 specimens collected at Strahan, Tasmania in October and November. Lyell did not state in what year but I assume it to be 1899 as he read his paper, "Description of a New Australian Butterfly, *Xenica tasmanica*", before the Field Naturalists' Club of Victoria, on the 10th September 1900. It was subsequently published in *The Victorian Naturalist*: The Journal & Magazine of the Field Naturalists' Club of Victoria Vol XVII, 1901 with the illustrations as per (Fig. 3). Described under *Xenica* it was placed in *Argynnina* by Waterhouse and Lyell (1914). In 1950 Couchman and Couchman succeeded in crossing it with *A. hobartia* showing it to be a subspecies thereof.

Lyell had previously published the life history of *Xenica hobartia* in *The Victorian Naturalist* Vol XII, 1896. This was based on notes by Edmund Jarvis from Devondale, Macclesfield, Victoria. This mainland form later became known as the subspecies *A. h. cyrila* (Waterhouse and Lyell, 1914). A. J. Turner (1925) erected *A. h. cyrila* to species status as *A. cyrila.* It therefore follows that any reference to *A. hobartia* on the mainland applies to the species *A. cyrila* and that *A. hobartia* is truly endemic to Tasmania. It must be noted that *A. cyrila* was still referred to as *A. h. cyrila* for some time after Turner's 1925 work. Examples include *What Butterfly is That?*, Waterhouse, 1932 and *Butterflies of Australia and New Guinea*, Barrett and Burns, 1951.

The **Marbled Xenica**, *Geitoneura klugii* (Guérin-Méneville,[1830]) (Figs 13,14 & 15) was described from a female specimen taken at Port Jackson, Sydney during the visit of the French corvette La Coquille, on its world tour 1822-1825. It was published in *Voyage autour de Monde* (Voyage around the World) in 1830. Described as *Satyrus Klugii,*[sic] the only part of the written description was the location: "Des environs du Port-Jakson, à la Nouvelle-Hollande".



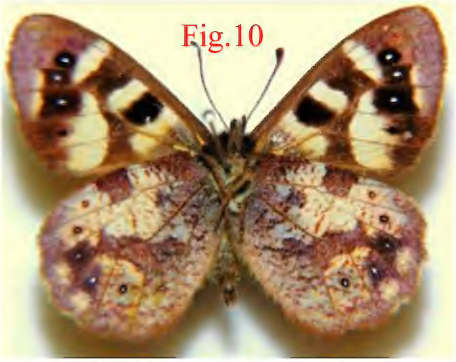


Fig. 7 Male-Female-Male _rev_flynni Fig. 8 *Danaus plexippus*
Fig. 9 *Argynnina hobartia hobartia*, Mossy Marsh 16-Nov-75
Fig. 10 *Argynnina hobartia hobartia*, Mossy Marsh 16-Nov-75, verso

It was accompanied by an illustration see (Fig. 4). The male was later described by Boisduval (1932) as *Satyrus singa*, in *Voyage de decouvertes de l'Astrolabe* Pt 1. It was noted as being collected in "Nouvelle-Hollande" by M. d'Urville. Butler (1867)

erected the genus *Geitoneura* in which he placed *Satyrus klugii* and *Papilio achanta* (Donovan, 1805). *G. klugii* was for more than 50 years known as *Xenica klugii*. George Semper in his paper "Beitrag zur Rhopaloceren fauna von Australien" (Contribution to Rhopalocera fauna of Australia) published in the *Journal des Museum Godeffroy* issue 14, 1879, was one of the few to use the correct name *Geitoneura klugii*. Until Couchman (1945) pointed out that Butler's *Geitoneura* with *Satyrus klugii* as the type species must take the place of *Xenica,* Australian authors referred to it as *Xenica klugii.* Most of these authors incorrectly spelt *klugii* with only one "i" e.g. Waterhouse and Lyell (1914) and Waterhouse (1932), while Rainbow (1907) spelt it as "kluggi". Barrett and Burns (1951) while placing it in the correct genus also spelt *klugii* with one "i". On the mainland *G. klugii* occurs from the southeast to the southwest, while in Tasmania it is found in the north and east (Braby, 2000).

Heteronympha:
Heteronympha was erected by the Swedish entomologist Wallengren (1858). In his new genus Wallengren placed *H. merope* (Fabricius, 1775) and *H. abeona* (Donovan, 1805) (the latter now know as *Tisiphone abeona)* making *H. merope* the type species.

The **Bright-eyed Brown**, *Heteronympha cordace* (Geyer, 1832) was originally described as *Tisiphone cordace* by Carl Geyer (1932). It was for a long time attributed to Jacob Hübner, as appeared in Waterhouse and Lyell (1914), Waterhouse (1932) and Barrett and Burns (1951). Jacob Hübner was a co-author of the publication "Zuträge zur Sammlung exotischer Schmettlinge", in which the description was published. The description was accompanied by an illustration (Fig. 5). The type location has always been in doubt as Geyer gave it as East India. Couchman (1954) points out that in the errata to his volume *Catalogue of Diurnal Lepidoptera of the family Satyridae in the collection of the British Museum*, Butler (1886) gives Melbourne as the habitat. Couchman, however, based on his knowledge of the species and the fact that it has not been taken from Melbourne, believes this to be the place of dispatch and not capture. Based on Geyer's figures, Couchman believed the most likely locality of the type to be the mountain ranges of southern New South Wales. Five subspecies of *H. cordace* have been recognized from Australia, with three endemic to Tasmania. For *H. c. comptena* Couchman, 1954 (Fig. 16), the author gives a definition of the name as, "spirit of the dead of the western tribes". This subspecies has a distribution which is restricted to the wet coastal areas of western and southern Tasmania (Braby, 2000). With *H. c. kurena* Couchman, 1954 (Figs 17 & 18), the author named it *kurena*, meaning "little" in the dialect of the eastern tribes of Tasmania, as it is the smallest of the races. *H. c. kurena* is restricted to high rainfall areas of Tasmania's central plateau, at altitudes between 600 and 1030m (Braby, 2000). *H. c. legana* Couchman, 1954, was named *legana*, from the eastern tribes' word for "fresh water". *H. c. legana* occurs in north-eastern Tasmania at altitudes up to 760m, (Braby, 2000).

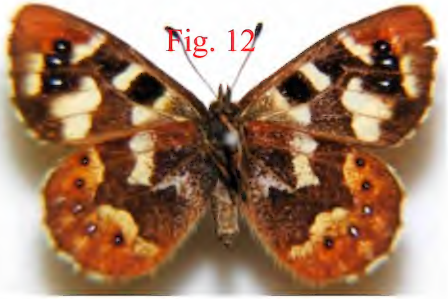


Fig. 11 *Argynnina hobertia tasmanica*, Tim Shea 8-Nov-75
Fig. 12 *Argynnina hobertia tasmanica*, Tim Shea 8-Nov-75, verso
Fig. 13 *Geitoneura klugii klugii* ♂, Kingston 5-Jan-75
Fig. 14 *Geitoneura klugii klugii* ♂, Kingston 5-Jan-75, verso
Fig. 15 *Geitoneura klugii klugii* ♀
Fig. 16 *Heteronympha cordace comptena*, Maydena 19-Jan-76

The **Common Brown**, *Heteronympha merope* (Fabricius, 1775) was originally described by the Danish zoologist Johan Christian Fabricius in 1775 and published in his work *Systema Entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. Based on the date of the

authorship and the habitat and collector given in the text as Nova Hollandia and Banks respectively, it is easy to see this is one of the earliest named species actually collected from Australia. Many non-endemic Australian lepidopterous species have been named prior to this date but from overseas material. With Banks being involved, it would have to have been collected in 1770, when Cook sailed the east coast of Australia with Joseph Banks on board. Fabricius named several other specimens collected by Banks, including the day-flying moth *Amata annulata*. *H. merope* was originally named *Papilio merope* as, at that time, all Lepidoptera were placed in the one genus *Papilio*. *Heteronympha merope* has three subspecies recognized, with one, *H. m. salazar,* Fruhstorfer, 1911 (Figs 19 & 20), occurring in Tasmania. Butler (1886) referred to the Tasmanian specimens in the British Museum as "Var. Minor ad obscurior". *H. m. salazar* is restricted to Flinders and King Islands, and to the drier northern and eastern parts of Tasmania (Braby, 2000).

The **Shouldered Brown**, *Heteronympha penelope* (Waterhouse, 1937). In a mismatch of males and females dealt with by G.A. Waterhouse (1937) in his paper "On the identity of the butterfly known in Australia as *Heteronympha philerope* Boisduval, 1832", the outcome left *Heteronympha philerope* as a synonym of *Geitoneura klugii* and a *Heteronympha* without a name. To this *Heteronympha* Waterhouse applied the name *H. penelope* and at the same time described five subspecies. The number of subspecies grew to six when Tindale (1952) published his paper "on a new form of *Heteronympha penelope* Waterhouse (Lepidoptera Rhopalocera, family Satyridae)". However (Braby, 2000) only recognized four subspecies. Without going into who sunk what, when and where, the status of the Tasmanian subspecies remains unchanged! In Tasmania there are two subspecies *H. p. diemeni* (Waterhouse, 1937) (Figs 21 & 22) and *H. p. panope* (Waterhouse, 1937) (Figs 23 & 24). *H. p. diemeni* mainly occurs widely throughout the lowlands of north-western, northern and eastern Tasmania (Braby, 2000). *H. p. panope* is restricted to the central plateau, in alpine areas between 610m to 1200m and near sea level between the Pieman River and Strahan on the west coast (Braby, 2000).

The **Tasmanian Xenica**, *Nesoxenica leprea* (Hewitson, 1864) was described by William Chapman Hewitson in his paper "New Species of Diurnal Lepidoptera" and published in *The Transactions of the Entomological Society of London* 3rd series vol 2 1864 -1866. It was described under the name *Lasiommata leprea* from specimens in his own collection. The description was accompanied by an illustration (Fig. 6). The habitat was given as Australia, particular locality unknown. Like the other Australian Satyrinae named in the genus *Lasiommata*, it was originally treated in the genus *Xenica* until Waterhouse and Lyell (1914) erected the genus *Nesoxenica* and made Hewitson's *Xenica leprea* the genotype, giving Mt. Wellington, Tasmania as the type location. They also divided *N. leprea* into two subspecies, the nominal race *N. l. leprea* (Hewitson, 1864) (Figs 25 & 26) from Mt Wellington and *N. l. elia* (Waterhouse and Lyell, 1914) (Fig. 27) from Mt Dundas and Mt Magnet.

Fig. 17 *Heteronympha cordace kurena*, Mossy Marsh 17-Jan-76
Fig. 18 *Heteronympha cordace kurena*, Mossy Marsh 17-Jan-76, verso
Fig. 19 *Heteronympha merope salazar* ♂, Kingston 11-Jan-75
Fig. 20 *Heteronympha merope salazar* ♀, Kingston 11-Jan-75
Fig. 21 *Heteronympha penelope diamani*, Tarraleah 31-Jan-75
Fig. 22 *Heteronympha penelope diamani*, Maydena 31-Jan-76, verso

I note that the distribution maps in Braby (2000) and Braby (2004) have the legends for the subspecies the wrong way round. In correspondence with Michael Braby, he believes this was first picked up in a review by Kelvyn Dunn. *N. leprea* is endemic to Tasmania.

Note: The accompanying map of Tasmania shows the collection points of all of the Satyrinae imaged, except for *Nesoxenica leprea elia* which was collected from Twin Creeks which is N.N.E of King River roughly halfway between there and the coast and the female of *Geitoneura klugii klugii* which is of a mainland specimen.

Oreixenica:
The genus *Oreixenica* was erected by Waterhouse and Lyell (1914), the type specimen being designated as *Oreixenica lathoniella* (Westwood, 1851), a species Westwood had previously described under the genus *Lasiommata*.

The **Silver Xenica**, *Oreixenica lathoniella* (Westwood, 1851). At the time of placing *O. lathoniella* in their new genus as the genotype, Waterhouse and Lyell described three other subspecies, one of which, *O. l. latialis* from above 5000ft on Mt Kosciusko, is now recognized as a distinct species. Turner (1925) described another and Braby (2000) recognized all four. Apart from the mainland subspecies, *O. l. herceus,* all are restricted to Tasmania. *O. l. lathoniella* (Figs 29 & 30) was named by John O. Westwood in 1851 along with *Argynnina hobartia* under the genus *Lasiommata*. It was described from a specimen from Van Diemen's Land. *O. l. lathoniella* occurs in northern, eastern and south-eastern Tasmania, from sea level to about 760 m (Braby, 2000). *O. l .barnardi* was described by A.J. Turner from near Cradle Mountain, Tasmania, which Couchman and Couchman (1977) corrected to being from the Daisy Dell area, a few kilometers further north. I can only assume it was named in honor of Mr. W. B. Barnard, of Toowoomba, Queensland, who accompanied Turner on a six week tour of Tasmania in January and February 1925, as Turner does not give the origin of the name. It is found from the Middlesex Plains across the plateau to the Great Lakes and along the western shores, between altitudes of 760 and 1065 m (Couchman and Couchman, 1977). *O. l. laranda*, Waterhouse and Lyell, 1914 (Fig. 28), is found in Western Tasmania. It occurs later in the season than the eastern race and is most common through March into early April (Couchman and Couchman, 1977).

The **Spotted Alpine Xenica,** *Oreixenica orichora* (Meyrick, 1885) has two subspecies *O. o. orichora* from Mainland Australia and *O. o. paludosa* (Figs 31 & 32) from Tasmania. *Oreixenica orichora* was described by Edward Meyrick in his paper "An Ascent of Mount Kosciusko", published in *The Entomologist's Monthly Magazine* in 1885.

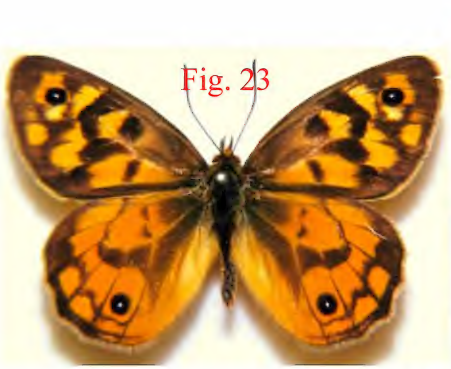


Fig. 23 *Heteronympha penelope panope*, Bronte 17-Feb-75
Fig. 24 *Heteronympha penelope panope*, Mossy Marsh 3-Feb-76, verso
Fig. 25 *Nesoxenica leprea leprea*, Hartz Mts 21-Jan-75
Fig. 26 *Nesoxenica leprea leprea*, Hartz Mts 21-Jan-75, verso
Fig. 27 *Nesoxenica leprea elia*
Fig. 28 *Oreixenica lathoniella laranda*, King River 10-Mar-79

It was described as *Xenica orichora* from a specimen taken on Mount Kosciusko, about 6000 feet, in January 1885 and noted as being common in "flowery valleys". The origins of the latter subspecies name are more complex but nonetheless quite interesting! *Oreixenica paludosa* was named in 1892 by Dr. Thomas P. Lucas under

the name *Xenica paludosa*, in his paper "New Species of Australian Lepidoptera" published in the *Proceedings of the Royal Society of Queensland* Vol 8. It was described from a specimen collected by a member of the aforementioned Barnard family, somewhere near Launceston, Tasmania. Lucas (1892) noted that it was allied to *X. orichora* and *X. correae* but was smaller and differently marked. Waterhouse and Lyell (1914), who erected the genus *Oreixenica* [under *Oreixenica lathoniella* (the genotype)], noted that *O. lathoniella* "has developed no fewer than four races. Dr. Lucas described a fifth from Tasmania but, in the absence of his type of *paludosa,* we are unable to say whether this differs from the eastern Tasmanian race, which we consider typical *lathoniella*". Nearly 40 years later, L.E. Couchman (1953), went into great (but complex!) detail on the confusion surrounding *O. paludosa,* stating that he accepted Lucas's description as valid for the species (although exact locality of collection unknown) and he also associated *latialis* (from Mt Kosciusko) and the new forms he found at Nimmitabel, NSW and Mount Buffalo, Vic, as subspecies of *paludosa*. Couchman then went on to describe *Oreixenica paludosa nama* and *Oreixenica paludosa theddora,* which have now reverted to *Oreixenica latialis latialis* and *Oreixenica latialis theddora* respectively.

Prior to this, G.H. Hardy (1916) described and illustrated (Fig. 7) *Oreixenica flynni*. It was named after the collector Prof. T. T. Flynn who collected one specimen at Cradle Mountain, Tasmania, at Christmas 1915. Over 60 years later, Couchman and Couchman (1977) rediscovered Lucas's *paludosa* in a swampy alpine area (as its name implied) near Launceston, and moreover in an area now known to have been visited by the Barnard family. They recognised that it was conspecific with *O. flynni*. Thus they state "there is every justification for applying this prior name to the insect, as its author (Lucas) stated in his original description (as) 'allied to *Xenica orichora'* ". Therefore *O. orichora paludosa* replaced *O. flynni* in Tasmania and *O. latialis* replaced *O. paludosa* on the mainland.

The **Ptunarra Xenica**, *Oreixencia ptunarra* (L.E. Couchman, 1953) (Figs 33 & 34) is endemic to Tasmania and has been listed as vulnerable under the Tasmanian Threatened Species Protection Act 1995. The Threatened Species Listing Statement was prepared by Phil Bell in April 1998. When Couchman described the species in 1953, he included three subspecies: *Oreixencia ptunarra ptunarra*, ["Ptunarra" = frigid, in the dialect of the western tribes of Tasmania], *O. p. roonina*, ["Roonina" = grass, in the dialect of the Big River tribe of central Tasmania] and *O. p. angeli*, after S. Angel a collector of the time. However, these subspecies were sunk by McQuillan and Ek in a biogeographical analysis of the species, published in 1996. Although McQuillan and Ek noted that the populations from the montane grasslands of north-western Tasmania (unknown to Couchman) should be recognized as a new subspecies, none was forthcoming. Braby (2000) agreed with McQuillan and Ek and did not recognize Couchman's subspecies though Bell (1998) refers to them. *O. ptunarra* is restricted to open plains and poorly drained areas bordering mountain lakes and swamps, (Braby, 2000).

Fig. 29 *Oreixenica lathoniella lathoniella*, The Springs Mt Wellington 14-Feb-76
Fig. 30 *Oreixenica lathoniella lathoniella*, The Springs Mt Wellington 14-Feb-76, verso
Fig. 31 *Oreixenica orichora paludosa*, Great Lakes Jan-76
Fig. 32 *Oreixenica orichora paludosa*, Great Lakes Jan-76, verso
Fig. 33 *Oreixenica ptunarra*, Steppes Tas 12-Mar-76
Fig. 34 *Oreixenica ptunarra*, Steppes Tas 12-Mar-76, verso

3. The Nymphs: Subfamily Nymphalinae

The **Meadow Argus**, *Junonia villida* (Fabricius, 1787) was named by J.C. Fabricius in 1787, as *Papilio villida*. It was published in *Mantissa Insectorum sistens species nuper detectas*. The genus *Junonia* was erected by Jacob Hübner in 1816 and published in *Verzeichniss bekannter Schmettlinge.* A number of subspecies have been recognized. Only *J. v. calybe* (Godart, 1819) (Fig. 35) occurs in the Australian subregion (Braby, 2000). *J. v. calybe* was described by the Frenchman Mr. Godart, a former headmaster of High School Bonn who had one of the finest collections of Lepidoptera in Paris. It was published in *Encyclopédie Methodique*, 1819. *J. v. calybe* was described as *Vanessa calybe* from a specimen from "Nouvelle-Hollande". Rainbow (1907) referred to this species as *Junonia villida*. Waterhouse and Lyell (1914) under the genus *Precis* noted, "We have followed Butler and Aurivillius in merging *Junonia* in this genus". By 1932 it was being referred to as subspecies *Precis villida calybe*, as in Waterhouse (1932) and Barrett and Burns (1951). In 1952 H. de Lesse in his paper "Note sur les genres *Precis* Hb. et *Junonia* Hb. (Lep. Nymphalidae)" published in the French journal, the *Bulletin de la Société entomologique de France*, based on his study of genitalia, maintained that *Precis* (type octavia) and *Junonia* (type lavinia) are distinct. Edwards (1977) noted this and referred to the genus as *Junonia* in his paper on *Junonia erigone* being recorded from Australia. Common and Waterhouse (1981) maintained this, referring to the Meadow Argus as *Junonia villida calybe*. *J. v. calybe* is widespread in Tasmania and specimens from the south-west are somewhat darker, (McQuillan, 1994).

Vanessa:
The genus *Vanessa* was erected by Fabricius in 1807 in the last of his works *Systema Glossatorum*. At the same time he erected the genus *Cynthia* which later became a synonym of *Vanessa*. The Red Admiral (*Vanessa atalanta*), found in temperate Europe, Asia and North America was designated as the type species by Lareille in 1810. The same butterfly was designated as the type for Hübner's genus *Pyrameis* of 1819, by S.H. Scudder (1875). *Pyrameis* was used in Australian literature by Rainbow (1907), Waterhouse and Lyell (1914), Waterhouse (1932) and Barrett and Burns (1951). By 1981 Common and Waterhouse were using the name *Vanessa* and noted that the Australian species can be separated into two subgenera *Cynthia* Fabricius, 1807 and *Bassaris* Hübner, 1821, as resurrected by Field (1971).

The **Yellow Admiral** *Vanessa itea* (Fabricius, 1775) (Fig. 36) was named by J.C. Fabricius in 1775 under the name *Papilio itea*, from a specimen collected by Banks in Nova Zelandia (New Zealand). Common and Waterhouse (1981), following Field (1971), placed it in the subgenus *Bassaris*. In Tasmania it is widespread up to 1000m but rarely common, (McQuillan, 1994).

The **Australian Painted Lady**, *Vanessa kershawi* (McCoy, 1868) (Fig. 37) was originally named under *Cynthia kershawi* by Professor Frederick McCoy in 1868 in his paper "The Australian Representative of *Cynthia cardui*" and was published in

The Annals and Magazine of Natural History series 4 vol. 1 1868. He named it *kershawi* after Mr. W. Kershaw, a collector he had employed, first pointed out the difference between the Australian and European forms. McCoy noted the differences as follows "The Australian species differs from the European one, in having the centres of the three lower round spots on the posterior wings bright blue, and having two other blue spots on the posterior angles of the same wings, the corresponding parts of the European form being black". It is widespread in Tasmania with open forest and grassy woodland being favoured habitats, (McQuillan, 1994).

Fig. 35 *Junonia villida calybe*

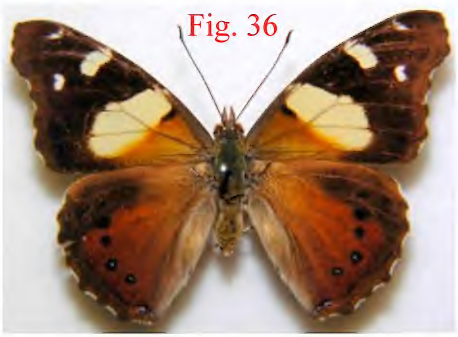


Fig. 36 *Vanessa itea*

Fig. 37 *Vanessa kershawi*

Notes:

The common names herein are from Braby (2000). Images, Figs 1-7, were taken from original publications, all but two of the remaining images were photographed from Jak Guyomar's collection, the exceptions being *Danaus plexippus* and *Nesoxenica leprea elia* which were photographed from specimens in the late Jim Pickering's collection in my care. With the exception of the female *Geitoneura klugii klugii*, all of the images in the Satyrinae subfamily are of specimens collected in Tasmania. All others are imaged from mainland specimens.

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I am indebted to Jak Guyomar for access to his collection of Tasmanian butterflies, which was once in the care of Garry Sankowsky (unfortunately the names of the original collectors are unrecorded). John Moss helped with corrections and additions to the manuscript and Margaret Greenway helped with access to some papers. I am also indebted to Michael Braby and Dave Britton for their prompt replies to my

queries. Thanks go to the online Biodiversity Library and the Smithsonian Institute for access to historical works.

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Photos Peter Hendry

Amendments to The Genus *Acraea* (Lepidoptera : Nymphalidae)

Published in Metamorphosis Australia, Issue No. 70, September 2013 – *Peter Hendry*

I have had the privilege of having my article on the genus *Acraea* being read by a world expert on the subject, Dominique Bernaud. Dominique has studied the *Acraea* for over 30 years and together with J. Pierre was responsible for resurrecting the name *terpsicore* to the newly arrived butterfly in Australia. He has published many papers, many of which are available on his website www.acraea.com.

Dominique points out that the listing of the tribe Acraeini, by Niklas Wahlberg, I referred to is based on old and out of date data. He has contacted Niklas, who has put a warning on his website and referred viewers to Dominique's website.

In my paper I state, in regards to *Acraea buettneri*, that "Nothing is published on its early stages or host plants". Dominique, himself, has in fact discovered and published the host plant in his paper, "Ecologie des Acraea du parc de la Sangba (République Centrafricaine) (Lepidoptera Nymphalidae)" published in Revue D'entomologie Generale, Lambillionea, Supplément au N° 4, décembre 2000. *Acraea buettneri* hosts on the plant *Caloncoba glauca* [Achariaceae (Flacourtiaceae)], feeding on seedlings up to 1 metre.

In my explanation of plate ii from Eltringham's monograph, I noted *Acraea arabica* as being the current name for *A. doubledayi arabica*. this should in fact be *A. d. azvaki* Carcasson & Ackery, 1981

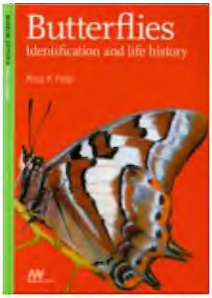
I thank Dominique for taking the time to make me aware of my errors.

P.S. Dominique has sent me an updated checklist of the *Acraea* with synonyms, forms and aberration names. If you would like a copy, please email me at bevyjoy93@gmail.com.

BOOK REVIEW

Field Guide - *Butterflies: Identification and life history* –

reviewed by *Kelvyn Dunn*



Author: R.P. Field. Museum Victoria Publishing, 2013; 315pp. ISBN 978-1-921833-09-0 Paperback, Aust. $29.95. E-book ($19.95) available online at: http://museumvictoria.com.au

For centuries, butterflies have captured the attention of naturalists – in Europe, since the late 1500s and in Australia, since its discovery in 1770. The proliferation of books on butterflies worldwide is testimony to their ongoing fascination among many observers, keen and casual alike. This field guide now joins the ranks of those others dealing with Australia or

parts thereof. This one, however, very suitably fills a needed gap!

A closely trimmed, postcard-styled image of the 'Tailed Emperor' set against an orange background and pale green spine covers this half-A4 sized book. It is adequately eye grabbing that many shoppers (with little more than a passing interest) will lift the book from the shelf to browse its contents. On opening it, they will likely pause to admire the magnificent photo of a roosting Dainty Swallowtail, sharply contrasted against a green background. After skimming the Contents page they will likely pause again, this time in admiration of a beautifully sculptured butterfly egg! To many it would seem such a small and unimportant thing, particularly from a broader human-centred industrial view of the world and its usefulness to us, but without our technology including scanning electron microscopes and high-resolution digital photography, we would be less the wiser of their great variety and splendid intricacy!

Dr Ross Field is an entomologist of considerable recognition (with over 100 biological publications undergirding him in professional circles) and, until recently (prior to retirement), served as Project Director in Science for the DPI, Melbourne. In addition, he has keenly observed butterflies for 50 years and during that time has studied their life histories, named new taxa, and documented various aspects of their biology. This new field guide reflects those years of dedicated fieldwork and a persistent approach to fact gathering to achieve the task. It parcels together a vastly scattered information base on the life histories of Victorian butterflies and presents them to the broader public in a readable form. For Victoria this is the gap that his field guide has now filled – they are for the first time in one place! And *we* are the richer for this.

The title does not specify the work's geographic coverage but the Introduction clarifies this, albeit indirectly, by stating that this book "explores the life history of all the recorded butterflies of Victoria." It provides images "of almost all the life stages, together with examples of the food on which the larvae feed and the habitats in which they are found…" Butterflies are largely a tropical group – adults are prominent throughout the year in northern Australia – but in the cooler clime of Victoria, much of the life of a butterfly is not as the winged creature, so synonymous with that name, but as an immature stage that over-winters. The aerial stage can enable greater dispersal and, in process, will be more conspicuous but it is usually comparatively short lived. In contrast, the juvenile stages often secrete themselves among leaf litter (sometimes some distance from their specific food source or even underground in ant-galleries) or cunningly camouflage themselves on their food source – almost invisible except to the trained eye of the ardent naturalist. Not surprisingly then, Ross points out that many of the life stages have never been illustrated before!

The book explains what is included and what is not and why, and the opening chapters begin with the basics of butterfly biology and illustrate the life cycle. The composite images of the eggs – crisply in focus and perhaps as seen from a tiny

larva's vantage point on the host plant – give us an impressive insight. Such detail, which looks curiously 'out of this world', has remained largely hidden from those naturalists of former times equipped with but a hand lens in the field. Scale bars are a valuable addition to these highly magnified images; but elsewhere, the text specifies averaged measures for those more visible life stages. To guide the user, some photos include arrowheads or labels pointing out features of note. The system of nomenclature (butterflies belong with moths), their natural enemies (commonly parasitic wasps and flies), their distributions (Victoria is subdivided into five regions), and their habitats (a subject often neglected in field accounts of last century) are each overviewed in sequence. The study of butterflies (which some readers will be familiar with), issues of conservation (a vital focus amidst ongoing habitat fragmentation), and the role of butterflies as a 'flagship group' (they are important animals – not just decorations on flowers) are then summarised. A list of abbreviations appears on page 21 (under the title – 'How to use this book'), and one needs to read that section or, otherwise, possibly stumble over the geographical descriptors used throughout the 130 species accounts. These accounts, which make up the bulk of the book, emphasise common names (bolded), describe the life stages, list the larval host plants or genera utilised (with notes on regional usage where applicable), précis specific biology, and broadly describe the habitat and range occupied by each species. A plotted map and often a photo of the species' host plant or its favoured habitat follow the text, and the opposing page (fully dedicated to images) provides a series of photos of the life history. A Checklist of species, a Glossary, and separate Indexes of scientific and common names of the Victorian species complete the work.

The high quality plates, which are the prominent feature of the work, usually show all life stages of each species. Both museum specimens and live adults (some are naturally in situ, and others contrasted sharply against a mono-coloured background in studio-pose) are included. Irrespective of the modelling stance captured, each usually shows particular wing patterns and markings that can be helpful to distinguish the species. Ross took many of these photos himself but a few butterfly photographers have also contributed some nice images to enhance the book (photo credits appear in the Acknowledgements). Some photos of the live adults are quite striking; the male Narrow-brand Grass-dart, the Blue Triangle, the Yellow-spotted Jezebel, the Dusky Knight (underside), and the male upper side of the Moonlight Jewel are well-poised examples; a limited few images may seem banal to some more critical specialists though, whose trained eye may detect some unnaturalness in places. For example, the male Cabbage White (p.151), shown on the purple Buddleia flowers, looks 'a bit tired' (given its awkward stance) – and a more alert adult could have easily replaced it. However, most images of live adults are pleasing and a few reveal aspects of behaviour; the clustered feeding by the Orange Alpine Xenica is a particularly fascinating example, suggestive of high population density at that time, and will attract more than a cursory glance. Of the five families of butterfly that occur in Victoria, the Skippers are the most complex group in terms of recognition, due to their

close similarity. The adults are usually flighty and often hard to identify in the field, but the large illustrations of the larvae of each species will ease comparisons of that particular life stage for the small fauna concerned. The head patterns, which differ between closely related species, will assist identification where these markings are adequately visible in the photos (most are) and where the larval head capsules are in similar pose (sometimes the case). The photos of head capsules of pupae of selected skippers (p.27) provide a useful single plate, as they too help identify the species involved, particularly in the absence of any adults, should they later fail to emerge (as can happen).

The plotted species maps and tabulated 'occurrence ratings' (adult temporal charts) were an immediate drawcard to me, given my personal background in spatial and temporal mapping of the Australian species in the early 1990s. The maps distinguish, by use of colour codes, those pre-1970 records (historic) from the contemporary encounter records (1970 onwards). Some issues need comment though, and for one species, the Common Pencilled Blue (*Candalides absimilis*), plots are included for a disjunct area near Melbourne where the endemic subspecies dealt with (namely, *C. a. edwardsi*) does not occur. The historic records from central Victoria are, in fact, those of the nominate subspecies and the population is believed to have been a temporary introduction to Victoria and human assisted in origin. For another species, the Praxedes Skipper, the location plot situated north of Melbourne (p.38) appears unusual, and if authentic, represents an extension to the known or accepted distribution for this species. In that regard, the text rarely mentions specific localities where species have strongholds but this finer information is available in other sources, some of which are suggested reading under 'Further Information' (p.311).

Faunal coverage is a debatable topic with some shades of grey evident. The work deals with all 128 species recorded (but not necessarily breeding) within the state of Victoria, and includes two additional species known from New South Wales, at sites very close to the Victorian border (p.21). However, the usefulness of including plots for species that are likely human assisted (in some way) and which have not established populations comes into question at this time. The unique encounter with the Caper Gull (*Cepora perimale*) in 1914 is one such example – human assistance was the original capturer's suspicion, and offered as explanatory many years later in 1951, although it may have been a natural event as the adult was not fresh when collected. It is best included as a legitimate vagrant (as Ross has done), but the Yellow Palm-dart (*Cephrenes trichopepla*), another interesting example, perhaps deserves little more than passing commentary. The encounter of a single larva of this skipper stands as evidence of its occasional arrival on nursery stock into Victoria (and because of this, observers may encounter it and that may be the rationale for its coverage) but there have been no adults reported to date, and there is no evidence of an established colony in Melbourne. Movement of small palms from Queensland to Melbourne has been in operation for several decades now; the larvae or pupae of this largely tropical species, which shelter on the foliage (and would translocate with the

host plant) doubtfully survive the southern winter. That said, Ross has chosen to include all species authenticated from Victoria, irrespective of the circumstances of some (and that is his prerogative). However, there have been reports from Melbourne suburbs of a few other northern species whose presence was almost certainly due to human assistance of some form. He eliminates three such species (p.21) which seem very unlikely in absence of vouchers (and are best considered mistaken), but there are also published sightings (by experienced observers) of the Cruiser (*Vindula arsinoe*), Clearwing Swallowtail (*Cressida cressida*) and Orange Lacewing (*Cethosia penthesilea*) – the latter photographed last year (2012) in a suburban garden. These bizarre encounters, each considered genuine, are without mention and under the established frames of inclusiveness each deserved a passing comment; they were, presumably, escapees from the Melbourne Zoo butterfly house or were from ceremonial releases for public events. Notwithstanding those likely origins, each is just as legitimate a visitor as is the aforementioned alien larva found on an imported palm from Queensland!

The temporal charts, which display the adult appearances, are an informative guide to those observers and photographers who wish to focus on the adult form of the insect. They indicate the numbers of records of adults per month, and for the most part are reliable, but it seems bred material (the adults of which often emerge out of season) and some reports of juvenile stages have been inadvertently included and have distorted some displays. Those records of the Orange Palm-dart (*Cephrenes augiades*) (p.108) for June and July (an unsuitably cold time of year in Victoria when only the most cold-resistant adult butterflies are active – and this skipper is not one of them) were almost certainly based on reared material or perhaps larval reports. Doubt also cloaks the reliability of the two September records of the Dark Grass-dart (*Suniana lascivia*). From years of experience with this species near Melbourne, I write with confidence that it does not normally emerge before December in central Victoria, and in far eastern Victoria, (where warmer conditions usually prevail enabling a longer flight season) a few adults routinely appear in late November. September seems erroneous on prima facie evidence but odd happenings can occur from time to time – nature can be full of surprises!

The text is accurate, up to date, and has been very carefully proof read with all but a few issues resolved. Recognition of the Common Crow as *Euploea corinna* (rather than *E. core*), in accordance with current understanding, accepts the Australian population as endemic (although it may also occur in New Caledonia) but this decision has created consequential errors for the text which were overlooked during the proofing stage. Under this alternative taxonomic arrangement the species does not range from India to Australia (compare p.210), and there are no subspecies in Australia or elsewhere on that same understanding. For the Caper Gull (*C. perimale*) there are actually three subspecies currently recognised in political Australia (rather than just one), albeit only one occurs on the mainland proper (and that may be what the author had intended to state). Unfortunately, in the Checklist of taxa (pp.296-304),

which tabulates the presence of each species and subspecies (where applicable) across the states and territories, the inventory data for the Varied Sword-grass Brown is muddled. That species does not occur in Tasmania for starters. At the subspecies level, *T. a. morrisi* is not a conservation-listed taxon in South Australia and it does not occur in that jurisdiction (*T. a. albifascia* is the taxon intended, which has a limited distribution in the southeast of that state and, by default, the same distribution is missing from its dataset). Similarly, *T. a. rawnsleyi* does not occur in New South Wales (and the taxon intended was *T. a. regalis* – its main distribution in that state is missing as well). Finally, a misspelling of the Blue Triangle's subspecific epithet, *choredon*, appears in the species' accounts on p.116.

Most technical books are seldom free of minor faults and small oversights, which expose themselves on fine inspection as part of a critical review, but it is the usefulness of the work – especially 'the gap filled' – that is most important. As the blurb clarifies, "*This book aims to provide amateur naturalists, bushwalkers and others with a detailed account of butterflies found in Victoria and beyond.*" The content provided is accessible by colour-coded sections, and as arranged, is well suited to the field naturalist needing information quickly; those butterfly watching whilst bushwalking in Victoria, as well as in southern NSW and eastern South Australia, will find it very handy. Of the spectrum of readers in Victoria that it will appeal to, it is likely that some will become enthused with this subject over time, as Ross did five decades ago, and may wish to expand on our knowledge of those (now very few) enigmatic species for which life history information is still fragmentary. It has taken Ross the last twelve years to compile this field guide (p.310), and his personal challenge to record the life histories of all the Victorian species, which the task necessitated, can now benefit the wider public who will share in his experience by its reading. This excellent piece will prove useful to many southern naturalists over the coming years.

Ed.: The book is available from BOIC for a member's price of $25, plus $13 postage and handling.

REPORT

Report on afternoon identifying Xyloryctidae – *Peter Hendry*

On Saturday 26th October 2013, what started out slowly ended up as a rather splendid outing for all who attended. With several members unable to attend until late in the afternoon, Graham McDonald and myself started trying to identify Graham's myriad of moth images. Wesley Jenkinson joined in with two drawers of Xyloryctidae specimens and many identifications were made. When Graham produced images of one of his little unknowns, I was delighted to see one of my favorites appear on his computer screen. It was a member of the genus *Tisobarica* belonging to the Oecophoridae. He had several images of what turned out to be two species. One of

these we were able to identify as *Tisobarica jucundella*. By now, as per usual, we were off course. While looking at other non Xyloryctidae, Graham produced an image of another of my favorites the Zyganid moth, *Hestiochora erythrota*.

As the afternoon wore on, other members arrived and while Graham, Wes and I played games of "if that's that one then what's this one" night fell and I was late with the light trap. In spite of the enjoyment of being satisfied we made progress naming some of our moths, the highlight of the day was the magnificent supper that emerged. With barbeque meats, Bev's potato salad with mayonnaise and mustard sauce and bacon, fresh salad with eggs, a bottle or two of the red stuff, followed by some of Bev's French chocolate birthday cake, some of Ann's apple cake, more of Wes' melting moments and a wide variety of teas provided by "Mr. Twinings", it was quite the treat.

In the mean time we were treated to images of African wild life from Dennis and Leah's recent trip there and a short video Beth had made from Graham's moth photos. Back at the light trap Graham had his flash running overtime and Wes and I made a few new collections. Even members of the Xyloryctidae made an appearance. For the dry conditions the number of insects that appeared was quite impressive.

I would like to thank all who attended for making it the splendid outing it was and to Leah and Beth and all who helped Bevy in the kitchen and setting the table. Though it will probably be months away, I am very much looking forward to the next moth identification day (what an excuse for a great nosh up!).

LETTERS

Hi Daphne,

I was up on Mt Merino in Lamington National Park last week, chasing up photos of flora as always, and came across a couple of interesting invertebrates.

The weevil was on a juvenile specimen of *Orites excelsus* (Prickly Ash) in the Proteaceae family which includes Grevilleas, Waratahs, Banksias and Proteas. Prickly Ash can grow to 30 metres tall, so finding this weevil was fortunate as the young plant was only a metre tall.

The distinctive blunt spines on its back were interesting. It was roughly 20 to 25 mm long. And it was at the highest elevation in the park, nearing 1200 metres high ... up in the clouds!

The other photo is of an extremely rare plant (actually classified under state and federal legislation as **endangered)** called Lamington Eyebright (*Euphrasia bella*). It's only found at the highest elevation in the Park with Antarctic Beech trees.
The population has diminished in recent years because of trampling at the site by bushwalkers. It's a hemi-parasitic species, growing to only 30 cm tall, attaching its roots to nearby plants to extract some nutrients to assist in its survival.

The photo of 2 flowers was a bit of a surprise when I downloaded it onto my computer back here at home as the right hand flower shows a small red mite in the throat of the flower. Further photos taken of the flower show the mite has moved back deeper into the flower's throat to escape my camera flash I suspect! (And the mite is probably still in the flower that is now being pressed as a specimen at the Queensland Herbarium!)

An interesting day all up, as not only were there interesting invertebrates but possibly a new plant species found as well ... a native Bluebell (*Wahlenbergia*). But we'll have to wait and see on that one after some expert botanical assessment by Herbarium botanists. Regards, *Glenn Leiper*
Photos Glenn Leiper

****

Dear Daphne,

White tailed spiders have turned up from time to time in my house without being much of a worry. But one year a female decided to make her egg-sac in my study. and – you won't believe this – she 'chose' "The Biology of Spiders" by Theodore H. Savory! It must be said though that there were at least a dozen books about spiders on that particular shelf. Savory's book was my favourite reading at the time so it

could have been protruding a few inches from the shelf; I didn't make a note at the time. Just the same – a remarkable coincidence! *Densey Clyne*

Photos Densey Clyne

****

Photo Shoot – *Ron May*

Late one afternoon, within our family garden in Toowoomba, I was fortunate to find an Arachnid on a branch of a Camelia shrub which had previously been pruned. The specimen was of a White Crab Spider, *Thomisus spectabilis* [Isoch]; [Araneae: Thomisidae] (Figs1-3).

Returning with an empty film container (yes, I still use film) *T. spectabilis* was captured. By this time the light had faded fast, so my specimen was left in the container overnight.

Next morning, which I believe to be the optimum time for photography, was cold and overcast. *T. spectabilis* was very photogenic, as the images reveal. This Crab Spider was released within its own environment and on the white Fuchsia sp. (Figs 2-3) where it was well camouflaged to deceive its prey.

Butterfly From Afar - *Peter Hendry*

A work colleague of mine has taken what he calls, a gap year and taken his family to England for twelve months. He has sent me this image of the Small Tortoiseshell, *Aglais urticae* (Linnaeus, 1758). As the name implies the larva feed on Nettles in the Urticaceae.

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YOU ASKED

Q In September of the this year, 2013, I found a pupa custodiate (partly open cocoon) (Fig. 1).

The cocoon, which was constructed from debris and faeces, was located beneath a yellow Banksia Rose (*Rosa banksiae lutea*). Also there, beneath the rose, were plants of the Native Violet (*Viola hederacea*).

The cocoon was placed in a container having air holes and was checked daily for any activity. After 28 days the lepidoptera emerged and was photographed (Fig. 2).

No doubt we have a club member who can identify the moth.

Fig. 1

Fig. 2

The skipper (Fig. 3) was a recent visitor to our garden in Toowoomba. Would a member please have a go at the identification for me. Thanks *Ron May*
Photos Ron May

Fig. 3

A Ron thanks for the challenge. I believe it to be *Eulechria atmospila* a member of the Oecophoridae subfamily

Oecophorinae. *E. atmospila* was named in 1916 by Alfred Jefferis Turner from a specimen collected by Mr. R. Illidge at Killarney, Queensland, in November 1901. The meaning of the specific name *atmospila* was given by Turner as "with smoky spots". Ian Common, in *Oecophorine Genera of Australia II*, lists several species of *Eulechria,* including *E. atmospila* which he has raised from larva feeding on dead Eucalyptus leaves in litter on the ground. They are usually found in sheltered situations close to the base of a tree or other objects.
Images of *E. atmospila* can be found on line at:
http://www.barcodinglife.org/index.php/Taxbrowser_Taxonpage?taxon=Eulechria+atmospila+&searchTax *Peter Hendry*

The small skipper in your image is the Greenish Grass-dart, *Ocybadistes walkeri sothis*. The common name refers to freshly emerged adult specimens which often have a slight greenish tinge to the underside of the wings. It is frequently encountered in suburban gardens where small flowers and grasses are growing, particularly unmown couch grass. This species is more common during the warmer months of the year.

Wesley Jenkinson

BUTTERFLY AND OTHER INVERTEBRATES CLUB PROGRAMME

Excursion to Kalbar – February 1st and/or 2nd 2014

What: This twice postponed (due to dry weather) activity will be held on Aubrey Podlich's property. Aub says "Two thirds of our 43 acre property is covered by a low brigalow-softwood vine scrub on volcanic rock, (Obum-obum, the district, means "hard stone") which, combined with our various neighbours'scrub, is probably the largest existing remnant of the once vast Fassifern Scrub." Activities will include identification of butterfly and moth host plants as well as the recording of as many insects as can be found. We will use lights in the evening to attract and record beetles, cicadas, moths and other insects.
The block has no facilities, no drinking water (5 small dams), no toilets.... there is a bush picnic area, BBQ and fire circle. Day visitors and overnight campers will need to be self-sufficient.

When: From 10 am Saturday 1st and Sunday 2nd February 2014.

Where: Near Kalbar approximately one hour west of Brisbane. Map will be provided on RSVP.

RSVP: Ross Kendall on 07 3378 1187 or ross@butterflyencounters.com.au by January 30th

Planning and General Meeting.

What: A talk by Richard Zietek on beetles and the breeding of some beetle species will follow our quarterly planning meeting.

When: Saturday February 15th 2014 from 10am

Where: Richard's place at Capalaba – address provided on RSVP

Who: All members are welcome.

RSVP: Ross Kendall on 07 3378 1187 or ross@butterflyencounters.com

DISCLAIMER

The magazine seeks to be as scientifically accurate as possible but the views, opinions and observations expressed are those of the authors. The magazine is a platform for people, both amateur and professional, to express their views and observations about invertebrates. These are not necessarily those of the BOIC. The manuscripts are submitted for comment to entomologists or people working in the area of the topic being discussed. If inaccuracies have inadvertently occurred and are brought to our attention we will seek to correct them in future editions. The Editor reserves the right to refuse to print any matter which is unsuitable, inappropriate or objectionable and to make nomenclature changes as appropriate.

ACKNOWLEDGMENTS

Producing this magazine is done with the efforts of:

- Those members who have sent in letters and articles
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- Printing of this publication is proudly supported by Brisbane City Council

We would like to thank all these people for their contribution.

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ARE YOU A MEMBER?

Please check your mailing label for the date your membership is due for renewal. If your membership is due, please renew as soon as possible. **Membership fees are $30.00 for individuals, schools and organizations**. If you wish to pay electronically, the following information will assist you: BSB: **484-799**, Account No: **001227191**, Account name: **BOIC**, Bank: **Suncorp**, Reference: your membership number and surname e.g. **234 Roberts.**

Butterfly and Other Invertebrates Club Inc.
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Next event – Excursion to Kalbar – February 1st and/or 2nd 2014 – See Club programme for details.